

IAP6 Rec'd PCT/PTO 23 JAN 2006

SEQUENCE LISTING

<110> SIMMONS, ANTHONY
CHEN, JIANMIN

<120> COMPOSITIONS AND METHODS FOR HERPES SIMPLEX PROPHYLAXIS
AND TREATMENT

<130> UTSG:263US

<140> UNKNOWN

<141> 2006-01-23

<150> PCT/US2004/024013

<151> 2004-07-26

<150> 60/489,984

<151> 2003-07-25

<160> 36

<170> PatentIn Ver. 2.1

<210> 1

<211> 921

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
Primer

<400> 1

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gacatccaga tgaccagtc tccatcctcc ttatctgcct ctctgggaga aagagtcagt 180
ctcacttgtc gggcaagtc ggaaattagt gcttacttaa gctggcttca gcagaaacca 240
gatggaacta ttaaagcct gatctacgcc gcattccactt tagattctgg tgtcccaaaa 300
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gaagattttg cagactatta ctgtctacaa tatgctagtt atccgctcac gttcgggtgct 420
gggaccaagc tggagctggg cgggtggcga tcgggtggag gaggcagcgg aggcgggtgg 480
tcggtgaagc tgcaggagtc tggacctgag ctggtgaagc ctggggcttc agtgaagatg 540
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cctggacagg gacttgagtg gattggatgg atttatcctg gacatagtag tactaagtac 660
aatgagaagt tcatgggcaa gaccatattg actgcggaca aatcctccag cacagcctac 720
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<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
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 20 25 30
 Lys Leu Gly Thr Glu Leu Gly Ser Asp Ile Gln Met Thr Gln Ser Pro
 35 40 45
 Ser Ser Leu Ser Ala Ser Leu Gly Glu Arg Val Ser Leu Thr Cys Arg
 50 55 60
 Ala Ser Gln Glu Ile Ser Ala Tyr Leu Ser Trp Leu Gln Gln Lys Pro
 65 70 75 80
 Asp Gly Thr Ile Lys Arg Leu Ile Tyr Ala Ala Ser Thr Leu Asp Ser
 85 90 95
 Gly Val Pro Lys Arg Phe Ser Gly Ser Arg Ser Gly Ser Asp Tyr Ser
 100 105 110
 Leu Thr Ile Ser Ser Leu Glu Ser Glu Asp Phe Ala Asp Tyr Tyr Cys
 115 120 125
 Leu Gln Tyr Ala Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu
 130 135 140
 Glu Leu Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
 145 150 155 160
 Ser Val Lys Leu Gln Glu Ser Gly Pro Glu Leu Val Lys Pro Gly Ala
 165 170 175
 Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Ser
 180 185 190
 Tyr Val His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 195 200 205
 Gly Trp Ile Tyr Pro Gly His Ser Ser Thr Lys Tyr Asn Glu Lys Phe
 210 215 220
 Met Gly Lys Thr Ile Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
 225 230 235 240
 Met Leu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Ile Tyr Phe Cys
 245 250 255
 Thr Arg Gln Glu Val Arg Leu Trp Tyr Phe Asp Val Trp Gly Ala Gly
 260 265 270
 Thr Thr Val Thr Val Ser Ala Ala Ala Arg Gly Gly Pro Glu Gln Lys
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<210> 3
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 <220>
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 <210> 4
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 <210> 5
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 <210> 6
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 <212> DNA
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<210> 8
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<210> 13
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<210> 14
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<210> 16
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<210> 17

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 <210> 18
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 <210> 20
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<400> 29
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<210> 31
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<212> DNA
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<223> Description of Artificial Sequence: Synthetic
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<210> 32
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Primer

<400> 32
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19

<210> 33
<211> 904
<212> PRT
<213> human herpesvirus 1

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20 25 30
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35 40 45
Gly Gly Pro Ala Thr Pro Ala Pro Pro Ala Pro Gly Ala Pro Pro Thr
50 55 60
Gly Asp Pro Lys Pro Lys Lys Asn Arg Lys Pro Lys Pro Pro Lys Pro
65 70 75 80
Pro Arg Pro Ala Gly Asp Asn Ala Thr Val Ala Ala Gly His Ala Thr
85 90 95
Leu Arg Glu His Leu Arg Asp Ile Lys Ala Glu Asn Thr Asp Ala Asn
100 105 110
Phe Tyr Val Cys Pro Pro Pro Thr Gly Ala Thr Val Val Gln Phe Glu
115 120 125
Gln Pro Arg Arg Cys Pro Thr Arg Pro Glu Gly Gln Asn Tyr Thr Glu
130 135 140
Gly Ile Ala Val Val Phe Lys Glu Asn Ile Ala Pro Tyr Lys Phe Lys
145 150 155 160
Ala Thr Met Tyr Tyr Lys Asp Val Thr Val Ser Gln Val Trp Phe Gly

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His	Arg	Tyr	Ser 180	Gln	Phe	Met	Gly	Ile 185	Phe	Glu	Asp	Arg	Ala 190	Pro	Val		
Pro	Phe	Glu 195	Glu	Val	Ile	Asp	Lys 200	Ile	Asn	Ala	Lys	Gly 205	Val	Cys	Arg		
Ser	Thr 210	Ala	Lys	Tyr	Val	Arg 215	Asn	Asn	Leu	Glu	Thr 220	Thr	Ala	Phe	His		
Arg 225	Asp	Asp	His	Glu	Thr 230	Asp	Met	Glu	Leu	Lys 235	Pro	Ala	Asn	Ala	Ala 240		
Thr	Arg	Thr	Ser	Arg 245	Gly	Trp	His	Thr	Thr 250	Asp	Leu	Lys	Tyr	Asn 255	Pro		
Ser	Arg	Val	Glu 260	Ala	Phe	His	Arg	Tyr 265	Gly	Thr	Thr	Val	Asn 270	Cys	Ile		
Val	Glu	Glu 275	Val	Asp	Ala	Arg	Ser	Val	Tyr	Pro	Tyr	Asp 285	Glu	Phe	Val		
Leu 290	Ala	Thr	Gly	Asp	Phe	Val 295	Tyr	Met	Ser	Pro	Phe 300	Tyr	Gly	Tyr	Arg		
Glu 305	Gly	Ser	His	Thr	Glu 310	His	Thr	Ser	Tyr	Ala 315	Ala	Asp	Arg	Phe	Lys 320		
Gln	Val	Asp	Gly	Phe 325	Tyr	Ala	Arg	Asp	Leu 330	Thr	Thr	Lys	Ala	Arg 335	Ala		
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Ala	Trp	Asp 355	Trp	Val	Pro	Lys	Arg 360	Pro	Ser	Val	Cys	Thr 365	Met	Thr	Lys		
Trp	Gln	Glu 370	Val	Asp	Glu	Met 375	Leu	Arg	Ser	Glu	Tyr 380	Gly	Gly	Ser	Phe		
Arg 385	Phe	Ser	Ser	Asp	Ala 390	Ile	Ser	Thr	Thr	Phe 395	Thr	Thr	Asn	Leu	Thr 400		
Glu	Tyr	Pro	Leu	Ser 405	Arg	Val	Asp	Leu	Gly 410	Asp	Cys	Ile	Gly	Lys 415	Asp		
Ala	Arg	Asp	Ala 420	Met	Asp	Arg	Ile	Phe 425	Ala	Arg	Arg	Tyr	Asn 430	Ala	Thr		
His	Ile	Lys 435	Val	Gly	Gln	Pro	Gln 440	Tyr	Tyr	Leu	Ala 445	Asn	Gly	Gly	Phe		
Leu	Ile 450	Ala	Tyr	Gln	Pro	Leu 455	Leu	Ser	Asn	Thr	Leu 460	Ala	Glu	Leu	Tyr		
Val 465	Arg	Glu	His	Leu	Arg 470	Glu	Gln	Ser	Arg	Lys 475	Pro	Pro	Asn	Pro	Thr 480		
Pro	Pro	Pro	Pro	Gly 485	Ala	Ser	Ala	Asn	Ala 490	Ser	Val	Glu	Arg	Ile 495	Lys		

Thr	Thr	Ser	Ser	Ile	Glu	Phe	Ala	Arg	Leu	Gln	Phe	Thr	Tyr	Asn	His		
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Cys	Glu	Leu	Gln	Asn	His	Glu	Leu	Thr	Leu	Trp	Asn	Glu	Ala	Arg	Lys		
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Leu	Asn	Pro	Asn	Ala	Ile	Ala	Ser	Ala	Thr	Val	Gly	Arg	Arg	Val	Ser		
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Ala	Arg	Met	Leu	Gly	Asp	Val	Met	Ala	Val	Ser	Thr	Cys	Val	Pro	Val		
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Ala	Ala	Asp	Asn	Val	Ile	Val	Gln	Asn	Ser	Met	Arg	Ile	Ser	Ser	Arg		
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Pro	Gly	Ala	Cys	Tyr	Ser	Arg	Pro	Leu	Val	Ser	Phe	Arg	Tyr	Glu	Asp		
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Gln	Gly	Pro	Leu	Val	Glu	Gly	Gln	Leu	Gly	Glu	Asn	Asn	Glu	Leu	Arg		
	610					615					620						
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625					630					635					640		
Phe	Thr	Phe	Gly	Gly	Gly	Tyr	Val	Tyr	Phe	Glu	Glu	Tyr	Ala	Tyr	Ser		
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His	Gln	Leu	Ser	Arg	Ala	Asp	Ile	Thr	Thr	Val	Ser	Thr	Phe	Ile	Asp		
			660					665					670				
Leu	Asn	Ile	Thr	Met	Leu	Glu	Asp	His	Glu	Phe	Val	Pro	Leu	Glu	Val		
		675					680					685					
Tyr	Thr	Arg	His	Glu	Ile	Lys	Asp	Ser	Gly	Leu	Leu	Asp	Tyr	Thr	Glu		
	690					695					700						
Val	Gln	Arg	Arg	Asn	Gln	Leu	His	Asp	Leu	Arg	Phe	Ala	Asp	Ile	Asp		
705					710					715				720			
Thr	Val	Ile	His	Ala	Asp	Ala	Asn	Ala	Ala	Met	Phe	Ala	Gly	Leu	Gly		
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Ala	Phe	Phe	Glu	Gly	Met	Gly	Asp	Leu	Gly	Arg	Ala	Val	Gly	Lys	Val		
			740					745					750				
Val	Met	Gly	Ile	Val	Gly	Gly	Val	Val	Ser	Ala	Val	Ser	Gly	Val	Ser		
		755					760					765					
Ser	Phe	Met	Ser	Asn	Pro	Phe	Gly	Ala	Leu	Ala	Val	Gly	Leu	Leu	Val		
	770					775					780						
Leu	Ala	Gly	Leu	Ala	Ala	Ala	Phe	Phe	Ala	Phe	Arg	Tyr	Val	Met	Arg		
785					790					795				800			
Leu	Gln	Ser	Asn	Pro	Met	Lys	Ala	Leu	Tyr	Pro	Leu	Thr	Thr	Lys	Glu		
				805					810					815			

Leu Lys Asn Pro Thr Asn Pro Asp Ala Ser Gly Glu Gly Glu Glu Gly
 820 825 830
 Gly Asp Phe Asp Glu Ala Lys Leu Ala Glu Ala Arg Glu Met Ile Arg
 835 840 845
 Tyr Met Ala Leu Val Ser Ala Met Glu Arg Thr Glu His Lys Ala Lys
 850 855 860
 Lys Lys Gly Thr Ser Ala Leu Leu Ser Ala Lys Val Thr Asp Met Val
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<210> 34
 <211> 904
 <212> PRT
 <213> human herpesvirus 2

<400> 34
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 Ser Gly Gly Val Ala Ala Thr Val Ala Ala Asn Gly Gly Pro Ala Ser
 35 40 45
 Arg Pro Pro Pro Val Pro Ser Pro Ala Thr Thr Lys Ala Arg Lys Arg
 50 55 60
 Lys Thr Lys Lys Pro Pro Lys Arg Pro Glu Ala Thr Pro Pro Pro Asp
 65 70 75 80
 Ala Asn Ala Thr Val Ala Ala Gly His Ala Thr Leu Arg Ala His Leu
 85 90 95
 Arg Glu Ile Lys Val Glu Asn Ala Asp Ala Gln Phe Tyr Val Cys Pro
 100 105 110
 Pro Pro Thr Gly Ala Thr Val Val Gln Phe Glu Gln Pro Arg Arg Cys
 115 120 125
 Pro Thr Arg Pro Glu Gly Gln Asn Tyr Thr Glu Gly Ile Ala Val Val
 130 135 140
 Phe Lys Glu Asn Ile Ala Pro Tyr Lys Phe Lys Ala Thr Met Tyr Tyr
 145 150 155 160
 Lys Asp Val Thr Val Ser Gln Val Trp Phe Gly His Arg Tyr Ser Gln
 165 170 175
 Phe Met Gly Ile Phe Glu Asp Arg Ala Pro Val Pro Phe Glu Glu Val
 180 185 190

Ile	Asp	Lys	Ile	Asn	Thr	Lys	Gly	Val	Cys	Arg	Ser	Thr	Ala	Lys	Tyr	195	200	205
Val	Arg	Asn	Asn	Met	Glu	Thr	Thr	Ala	Phe	His	Arg	Asp	Asp	His	Glu	210	215	220
Thr	Asp	Met	Glu	Leu	Lys	Pro	Ala	Lys	Val	Ala	Thr	Arg	Thr	Ser	Arg	225	230	235
Gly	Trp	His	Thr	Thr	Asp	Leu	Lys	Tyr	Asn	Pro	Ser	Arg	Val	Glu	Ala	245	250	255
Phe	His	Arg	Tyr	Gly	Thr	Thr	Val	Asn	Cys	Ile	Val	Glu	Glu	Val	Asp	260	265	270
Ala	Arg	Ser	Val	Tyr	Pro	Tyr	Asp	Glu	Phe	Val	Leu	Ala	Thr	Gly	Asp	275	280	285
Phe	Val	Tyr	Met	Ser	Pro	Phe	Tyr	Gly	Tyr	Arg	Glu	Gly	Ser	His	Thr	290	295	300
Glu	His	Thr	Ser	Tyr	Ala	Ala	Asp	Arg	Phe	Lys	Gln	Val	Asp	Gly	Phe	305	310	315
Tyr	Ala	Arg	Asp	Leu	Thr	Thr	Lys	Ala	Arg	Ala	Thr	Ser	Pro	Thr	Thr	325	330	335
Arg	Asn	Leu	Leu	Thr	Thr	Pro	Lys	Phe	Thr	Val	Ala	Trp	Asp	Trp	Val	340	345	350
Pro	Lys	Arg	Pro	Ala	Val	Cys	Thr	Met	Thr	Lys	Trp	Gln	Glu	Val	Asp	355	360	365
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Ala	Ile	Ser	Thr	Thr	Phe	Thr	Thr	Asn	Leu	Thr	Glu	Tyr	Ser	Leu	Ser	385	390	395
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Asp	Arg	Met	Phe	Ala	Arg	Lys	Tyr	Asn	Ala	Thr	His	Ile	Lys	Val	Gly	420	425	430
Gln	Pro	Gln	Tyr	Tyr	Leu	Ala	Thr	Gly	Gly	Phe	Leu	Ile	Ala	Tyr	Gln	435	440	445
Pro	Leu	Leu	Ser	Asn	Thr	Leu	Ala	Glu	Leu	Tyr	Val	Arg	Glu	Tyr	Met	450	455	460
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Glu	Ala	Pro	Ser	Ala	Asn	Ala	Ser	Val	Glu	Arg	Ile	Lys	Thr	Thr	Ser	485	490	495
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His	Val	Asn	Asp	Met	Leu	Gly	Arg	Ile	Ala	Val	Ala	Trp	Cys	Glu	Leu			

515					520					525					
Gln	Asn	His	Glu	Leu	Thr	Leu	Trp	Asn	Glu	Ala	Arg	Lys	Leu	Asn	Pro
	530						535				540				
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545					550					555					560
Leu	Gly	Asp	Val	Met	Ala	Val	Ser	Thr	Cys	Val	Pro	Val	Ala	Pro	Asp
				565					570					575	
Asn	Val	Ile	Val	Gln	Asn	Ser	Met	Arg	Val	Ser	Ser	Arg	Pro	Gly	Thr
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625					630					635					640
Gly	Gly	Gly	Tyr	Val	Tyr	Phe	Glu	Glu	Tyr	Ala	Tyr	Ser	His	Gln	Leu
				645					650					655	
Ser	Arg	Ala	Asp	Val	Thr	Thr	Val	Ser	Thr	Phe	Ile	Asp	Leu	Asn	Ile
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Thr	Met	Leu	Glu	Asp	His	Glu	Phe	Val	Pro	Leu	Glu	Val	Tyr	Thr	Arg
	675						680					685			
His	Glu	Ile	Lys	Asp	Ser	Gly	Leu	Leu	Asp	Tyr	Thr	Glu	Val	Gln	Arg
	690					695					700				
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705					710					715					720
Arg	Ala	Asp	Ala	Asn	Ala	Ala	Met	Phe	Ala	Gly	Leu	Cys	Ala	Phe	Phe
				725					730					735	
Glu	Gly	Met	Gly	Asp	Leu	Gly	Arg	Ala	Val	Gly	Lys	Val	Val	Met	Gly
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Val	Val	Gly	Gly	Val	Val	Ser	Ala	Val	Ser	Gly	Val	Ser	Ser	Phe	Met
	755						760					765			
Ser	Asn	Pro	Phe	Gly	Ala	Leu	Ala	Val	Gly	Leu	Leu	Val	Leu	Ala	Gly
	770					775					780				
Leu	Val	Ala	Ala	Phe	Phe	Ala	Phe	Arg	Tyr	Val	Leu	Gln	Leu	Gln	Arg
785					790					795					800
Asn	Pro	Met	Lys	Ala	Leu	Tyr	Pro	Leu	Thr	Thr	Lys	Glu	Leu	Lys	Thr
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Ser	Asp	Pro	Gly	Gly	Val	Gly	Gly	Glu	Gly	Glu	Glu	Gly	Ala	Glu	Gly
		820						825					830		
Gly	Gly	Phe	Asp	Glu	Ala	Lys	Leu	Ala	Glu	Ala	Arg	Glu	Met	Ile	Arg
	835						840					845			

Tyr Met Ala Leu Val Ser Ala Met Glu Arg Thr Glu His Lys Ala Arg
 850 855 860
 Lys Lys Gly Thr Ser Ala Leu Leu Ser Ser Lys Val Thr Asn Met Val
 865 870 875 880
 Leu Arg Lys Arg Asn Lys Ala Arg Tyr Ser Pro Leu His Asn Glu Asp
 885 890 895
 Glu Ala Gly Asp Glu Asp Glu Leu
 900

<210> 35
 <211> 394
 <212> PRT
 <213> human herpesvirus 1

<400> 35
 Met Gly Gly Ala Ala Ala Arg Leu Gly Ala Val Ile Leu Phe Val Val
 1 5 10 15
 Ile Val Gly Leu His Gly Val Arg Ser Lys Tyr Ala Leu Val Asp Ala
 20 25 30
 Ser Leu Lys Met Ala Asp Pro Asn Arg Phe Arg Gly Lys Asp Leu Pro
 35 40 45
 Val Leu Asp Gln Leu Thr Asp Pro Pro Gly Val Arg Arg Val Tyr His
 50 55 60
 Ile Gln Ala Gly Leu Pro Asp Pro Phe Gln Pro Pro Ser Leu Pro Ile
 65 70 75 80
 Thr Val Tyr Tyr Ala Val Leu Gly Arg Ala Cys Arg Ser Val Leu Leu
 85 90 95
 Asn Ala Pro Ser Glu Ala Pro Gln Ile Val Arg Gly Ala Ser Glu Asp
 100 105 110
 Val Arg Lys Gln Pro Tyr Asn Leu Thr Ile Ala Trp Phe Arg Met Gly
 115 120 125
 Gly Asn Cys Ala Ile Pro Ile Thr Val Met Glu Tyr Thr Glu Cys Ser
 130 135 140
 Tyr Asn Lys Ser Leu Gly Ala Cys Pro Ile Arg Thr Gln Pro Arg Trp
 145 150 155 160
 Asn Tyr Tyr Asp Ser Phe Ser Ala Val Ser Glu Asp Asn Leu Gly Phe
 165 170 175
 Leu Met His Ala Pro Ala Phe Glu Thr Ala Gly Thr Tyr Leu Arg Leu
 180 185 190
 Val Lys Ile Asn Asp Trp Thr Glu Ile Thr Gln Phe Ile Leu Glu His
 195 200 205
 Arg Ala Lys Gly Ser Cys Lys Tyr Ala Leu Pro Leu Arg Ile Pro Pro
 210 215 220

Ser Ala Cys Leu Ser Pro Gln Ala Tyr Gln Gln Gly Val Thr Val Asp
 225 230 235 240
 Ser Ile Gly Met Leu Pro Arg Phe Ile Pro Glu Asn Gln Arg Thr Val
 245 250 255
 Ala Val Tyr Ser Leu Lys Ile Ala Gly Trp His Gly Pro Lys Ala Pro
 260 265 270
 Tyr Thr Ser Thr Leu Leu Pro Pro Glu Leu Ser Glu Thr Pro Asn Ala
 275 280 285
 Thr Gln Pro Glu Leu Ala Pro Glu Asp Pro Glu Asp Ser Ala Leu Leu
 290 295 300
 Glu Asp Pro Val Gly Thr Val Ala Pro Gln Ile Pro Pro Asn Trp His
 305 310 315 320
 Ile Pro Ser Ile Gln Asp Ala Ala Thr Pro Tyr His Pro Pro Ala Thr
 325 330 335
 Pro Asn Asn Met Gly Leu Ile Ala Gly Ala Val Gly Gly Ser Leu Leu
 340 345 350
 Ala Ala Leu Val Ile Cys Gly Ile Val Tyr Trp Met Arg Arg His Thr
 355 360 365
 Gln Lys Ala Pro Lys Arg Ile Arg Leu Pro His Ile Arg Glu Asp Asp
 370 375 380
 Gln Pro Ser Ser His Gln Pro Leu Phe Tyr
 385 390

<210> 36
 <211> 393
 <212> PRT
 <213> human herpesvirus 2

<400> 36
 Met Gly Arg Leu Thr Ser Gly Val Gly Thr Ala Ala Leu Leu Val Val
 1 5 10 15
 Ala Val Gly Leu Arg Val Val Cys Ala Lys Tyr Ala Leu Ala Asp Pro
 20 25 30
 Ser Leu Lys Met Ala Asp Pro Asn Arg Phe Arg Gly Lys Asn Leu Pro
 35 40 45
 Val Leu Asp Gln Leu Thr Asp Pro Pro Gly Val Lys Arg Val Tyr His
 50 55 60
 Ile Gln Pro Ser Leu Glu Asp Pro Phe Gln Pro Pro Ser Ile Pro Ile
 65 70 75 80
 Thr Val Tyr Tyr Ala Val Leu Glu Arg Ala Cys Arg Ser Val Leu Leu
 85 90 95
 His Ala Pro Ser Glu Ala Pro Gln Ile Val Arg Gly Ala Ser Asp Glu
 100 105 110

Ala	Arg	Lys	His	Thr	Tyr	Asn	Leu	Thr	Ile	Ala	Trp	Tyr	Arg	Met	Gly	115	120	125	
Asp	Asn	Cys	Ala	Ile	Pro	Ile	Thr	Val	Met	Glu	Tyr	Thr	Glu	Cys	Pro	130	135	140	
Tyr	Asn	Lys	Ser	Leu	Gly	Val	Cys	Pro	Ile	Arg	Thr	Gln	Pro	Arg	Trp	145	150	155	160
Ser	Tyr	Tyr	Asp	Ser	Phe	Ser	Ala	Val	Ser	Glu	Asp	Asn	Leu	Gly	Phe	165	170	175	
Leu	Met	His	Ala	Pro	Ala	Phe	Glu	Thr	Ala	Gly	Thr	Tyr	Leu	Arg	Leu	180	185	190	
Val	Lys	Ile	Asn	Asp	Trp	Thr	Glu	Ile	Thr	Gln	Phe	Ile	Leu	Glu	His	195	200	205	
Arg	Ala	Arg	Ala	Ser	Cys	Lys	Tyr	Ala	Leu	Pro	Leu	Arg	Ile	Pro	Pro	210	215	220	
Ala	Ala	Cys	Leu	Thr	Ser	Lys	Ala	Tyr	Gln	Gln	Gly	Val	Thr	Val	Asp	225	230	235	240
Ser	Ile	Gly	Met	Leu	Pro	Arg	Phe	Ile	Pro	Glu	Asn	Gln	Arg	Thr	Val	245	250	255	
Ala	Leu	Tyr	Ser	Leu	Lys	Ile	Ala	Gly	Trp	His	Gly	Pro	Lys	Pro	Pro	260	265	270	
Tyr	Thr	Ser	Thr	Leu	Leu	Pro	Pro	Glu	Leu	Ser	Asp	Thr	Thr	Asn	Ala	275	280	285	
Thr	Gln	Pro	Glu	Leu	Val	Pro	Glu	Asp	Pro	Glu	Asp	Ser	Ala	Leu	Leu	290	295	300	
Glu	Asp	Pro	Ala	Gly	Thr	Val	Ser	Ser	Gln	Ile	Pro	Pro	Asn	Trp	His	305	310	315	320
Ile	Pro	Ser	Ile	Gln	Asp	Val	Ala	Pro	His	His	Ala	Pro	Ala	Ala	Pro	325	330	335	
Ser	Asn	Pro	Gly	Leu	Ile	Ile	Gly	Ala	Leu	Ala	Gly	Ser	Thr	Leu	Ala	340	345	350	
Val	Leu	Val	Ile	Gly	Gly	Ile	Ala	Phe	Trp	Val	Arg	Arg	Arg	Ala	Gln	355	360	365	
Met	Ala	Pro	Lys	Arg	Leu	Arg	Leu	Pro	His	Ile	Arg	Asp	Asp	Asp	Ala	370	375	380	
Pro	Pro	Ser	His	Gln	Pro	Leu	Phe	Tyr								385	390		